AMENDMENTS TO THE CLAIMS

In the set of claims within the Application, please amend and retain each claim as hereinafter indicated.

1.   (Currently Amended) A simulation system for simulating [[an]] operation of an automotive vehicle, said simulation system comprising:

an input device for providing vehicle information and path information;

a controller coupled to said input device having and operable to simulate said automotive vehicle using a vehicle computer model therein, wherein said controller is programmed to

determine a rear side slip angle of [[a]] said vehicle computer model;

determine an initial steering wheel angle that is input to [[the]] said vehicle computer model;

when [[the]] said rear side slip angle is determined to be greater than a predetermined threshold, determine a look ahead scale factor[[;]] when the rear side slip angle is greater than the threshold[[,]] and increase the distance of a look ahead point substantially on or near an intended vehicle path as a function of [[the]] said look ahead scale factor;

determine a first new steering wheel angle, which is input to [[the]] said vehicle computer model at a time later than [[the]] said initial steering wheel angle, input by comparing said intended vehicle path with [[the]] said look ahead point and the on or near said intended vehicle path;

operate [[the]] said vehicle computer model with [[the]] said initial steering wheel angle input or said new steering wheel angle; and

generate an output in response to [[the]] said vehicle computer model and [[the]] said initial steering wheel angle input or first said new steering wheel angle input.

2.   (Currently Amended) A simulation system as recited in claim 1, wherein [[the]] said predetermined threshold is about 15 degrees.

3.   (Currently Amended) A simulation system as recited in claim 1, wherein said controller is programmed to determine both a longitudinal vehicle velocity and a lateral vehicle velocity and determining the also determine said rear side slip angle as a function of [[the]] said longitudinal vehicle velocity and [[the]] said lateral vehicle velocity.

4.　　　(Currently Amended)　A <u>simulation</u> system as recited in claim 1<u>,</u> wherein said controller is programmed to determine [[a]] <u>said</u> look ahead scale factor as a function of [[the]] <u>said</u> rear side slip angle.

5.　　　(Currently Amended)　A <u>simulation</u> system as recited in claim 1<u>,</u> wherein said controller is programmed to determine [[a]] <u>said</u> look ahead <u>scale</u> factor as a function of an exponential of [[the]] <u>said</u> rear side slip angle.

6.　　　(Currently Amended)　A <u>simulation</u> system as recited in claim 1<u>,</u> wherein said controller is programmed to determine [[a]] <u>said</u> look ahead <u>scale</u> factor as a function of an exponential of a product of [[the]] <u>said</u> rear side slip angle and a constant.

7.　　　(Currently Amended)　A <u>simulation</u> system as recited in claim 6<u>,</u> wherein [[the]] <u>said</u> constant is about [[.02]] <u>0.02</u>.

8.　　　(Currently Amended)　A <u>simulation</u> system as recited in claim 1<u>,</u> wherein[[,]] when [[the]] <u>said</u> rear side slip angle is <u>determined to</u> not <u>be</u> greater than [[the]] <u>said predetermined</u> threshold, [[the]] <u>said</u> controller is <u>alternatively</u> programmed to determine an unscaled look ahead factor.

9.　　　(Currently Amended)　A <u>simulation</u> system as recited in claim 1<u>,</u> wherein [[the]] <u>said</u> controller is programmed to determine [[a]] <u>said new</u> steering wheel angle ~~input~~ when [[the]] <u>said</u> vehicle <u>computer model</u> is <u>determined to</u> not <u>be headed</u> on target<u>, and said target is associated with said intended vehicle path</u>.

10.　　(Currently Amended)　A method of operating a vehicle computer model having vehicle information and path information therein, [[the]] <u>said</u> method ~~operating~~ <u>being operable</u> on a digital computer system and comprising <u>the steps of</u>:

　　　(a)　determining a rear side slip angle of [[a]] <u>said</u> vehicle computer model;

　　　(b)　determining an initial steering wheel angle <u>that is</u> input <u>to said vehicle computer model</u>;

　　　(c)　when [[the]] <u>said</u> rear side slip angle is <u>determined to be</u> greater than a <u>predetermined</u> threshold, determining a look ahead scale factor[[;]] ~~when the rear side slip angle~~

is greater than the threshold[[,]] and increasing the distance of a look ahead point substantially on or near an intended vehicle path as a function of [[the]] said look ahead scale factor;

(d) determining a first new steering wheel angle, which is input to [[the]] said vehicle computer model at a time later than [[the]] said initial steering wheel angle, input by comparing said intended vehicle path with [[the]] said look ahead point and the on or near said intended vehicle path;

(e) operating [[the]] said vehicle computer model with [[the]] said initial steering wheel angle or first said new steering wheel angle input; and

(f) outputting results of the operating step generating an output in response to said vehicle computer model and said initial steering wheel angle or said new steering wheel angle.

11.   (Currently Amended)   A method as recited in claim 10, wherein [[the]] said predetermined threshold is about 15 degrees.

12.   (Currently Amended)   A method as recited in claim 10, wherein determining a rear side slip angle comprises step (a) is at least partially accomplished by determining both a longitudinal vehicle velocity and a lateral vehicle velocity and also determining [[the]] said rear side slip angle as a function of [[the]] said longitudinal vehicle velocity and [[the]] said lateral vehicle velocity.

13.   (Currently Amended)   A method as recited in claim 10, wherein determining a said look ahead scale factor comprises determining a look ahead factor is determined as a function of [[the]] said rear side slip angle.

14.   (Currently Amended)   A method as recited in claim 10, wherein determining a said look ahead scale factor comprises determining a look ahead factor is determined as a function of an exponential of [[the]] said rear side slip angle.

15.   (Currently Amended)   A method as recited in claim 10, wherein determining a said look ahead scale factor comprises determining a look ahead factor is determined as a function of an exponential of a product of [[the]] said rear side slip angle and a constant.

16.   (Currently Amended)   A method as recited in claim 15, wherein [[the]] said constant is about [[.02]] 0.02.

17.   (Currently Amended) A method as recited in claim 10, said method further comprising[[,]] the step of when [[the]] said rear side slip angle is determined to not be greater than [[the]] said predetermined threshold, alternatively determining an unscaled look ahead factor.

18.   (Currently Amended) A method as recited in claim 10, said method further comprising performing the step of determining [[a]] said new steering wheel angle input when [[the]] said vehicle computer model is determined to not be headed on target, said target being associated with said intended vehicle path.

19.   (Currently Amended) A method of operating a vehicle computer model having vehicle information and path information therein, said method comprising the steps of:
   determining a rear side slip angle of [[a]] said vehicle computer model;
   determining an initial steering wheel angle that is input to said vehicle computer model;
   determining a look ahead point that is substantially on or near an intended vehicle path for said vehicle computer model;
   when [[the]] said rear side slip angle is determined to be greater than a predetermined threshold, determining a look ahead scale factor[[;]] when the rear side slip angle is greater than the threshold[[,]] and increasing the distance of said look ahead point as a function of [[the]] said look ahead scale factor;
   when [[the]] said rear side slip angle is alternatively determined to be less than [[the]] said predetermined threshold, maintaining the distance of said look ahead point;
   when [[the]] said vehicle computer model is determined to be headed off a predetermined target, determining a new steering wheel angle, which is input to [[the]] said vehicle computer model, as a function of an error between by comparing said intended vehicle path with [[the]] said look ahead point and the on or near said intended vehicle path;
   operating [[the]] said vehicle computer model with [[the]] said initial steering wheel angle or said new steering wheel angle input; and
   outputting the results of the operating step generating an output in response to said vehicle computer model and said initial steering wheel angle or said new steering wheel angle.

20.   (Currently Amended) A method as recited in claim 19, wherein ~~determining a~~ said look ahead scale factor ~~comprises determining a look ahead factor~~ is determined as a function of an exponential of [[the]] said rear side slip angle.